

What Is Claimed Is:

1. A method for preparing a porous ceramic body with excellent thermal insulation property, the method comprising:

an impregnation step in which a polymer sponge having a three-dimensional porous network structure with open cells is immersed in an inorganic adhesive, such that the polymer sponge is completely impregnated with the inorganic adhesive;

a dewatering step in which the inorganic adhesive is partially removed from the polymer sponge impregnated with the inorganic adhesive, such that the polymer sponge contains the inorganic adhesive at an amount selected according to the desired density of the porous ceramic body; and

a drying step in which the polymer sponge from which the inorganic adhesive had been partially removed in the dewatering step is dried so as to cure the inorganic adhesive.

2. The method of Claim 1, which additionally comprises the step of introducing a gaseous or solid curing agent into the pores of the polymer sponge, before the drying step but after the dewatering step.

3. The method of Claim 1, wherein, at the impregnation step, the polymer sponge is immersed in the inorganic adhesive after mixing the inorganic adhesive with a solid or liquid curing agent.

4. The method of any one of Claims 1 to 3, wherein the impregnating, dewatering and drying steps are performed repeatedly several times.

5. The method of any one of Claims 1 to 3, wherein the

inorganic adhesive is at least one selected from the group consisting of silicates and modified silicates, including sodium silicate, potassium silicate and lithium silicate, sol compounds, including silica sol and alumina sol, and phosphate adhesives, including aluminum phosphate and modified aluminum phosphate.

6. The method of any one of Claims 1 to 3, wherein, at the impregnation step, the polymer sponge is immersed in the inorganic adhesive after mixing the inorganic adhesive with a surfactant.

7. The method of any one of Claims 1 to 3, wherein, at the impregnation step, the polymer sponge is immersed in the inorganic adhesive after mixing the inorganic adhesive with at least one selected from silane coupling agents and organic adhesives.

8. The method of any one of Claims 1 to 3, wherein, at the impregnation step, the polymer sponge is immersed in the inorganic adhesive after mixing the inorganic adhesive with at least one selected from sodium silicofluoride and magnesium sulfate.

9. The method of any one of Claims 1 to 3, wherein, at the impregnation step, the polymer sponge is immersed in the inorganic adhesive after mixing the inorganic adhesive with a water repellant.

10. The method of any one of Claims 1 to 3, wherein, at the impregnation step, the polymer sponge is immersed in the inorganic adhesive after mixing the inorganic adhesive with at

least one selected from the group consisting of aluminum hydroxide, magnesium hydroxide, antimony compounds, boric acid, borax, phosphoric acid, phosphate, phosphorus-based and halogen-based flame retardants, and thermosetting resins.

11. The method of Claim 2 or 3, wherein the impregnation and curing step are performed repeatedly several times such that the inorganic adhesive is impregnated again into the polymer sponge.

12. A porous ceramic body with excellent thermal insulation property, which is prepared by the method of any one of Claims 1 to 3.